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INTESTINAL OBSTRUCTION WITH REPORT OF CASES

BY

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Intestinal obstruction is one of the most important abdominal conditions we have to deal with. The different types of obstruction are as numerous as the causes which may range from a simple paralysis of the bowel to a complete occulusion.

There is no other trouble in the abdomen in which so much depends upon an early diagnosis—I refer to the acute types. If you do not resort to surgical interference during the first 48 hours after the onset of the symptoms the mortality will run very high. The symptoms sometimes come on so gradually that we fail to recognize the true condition, before gangrene has set in or the vitality of the bowel is so much impaired that a resection is necessary which lessens very materially the chances of recovery.

The symptoms of obstruction are modified both by the amount of stenoses (whether complete or incomplete) and also by its anatomical location. If the obstruction is near the stomach you will get vomiting early, but not marked distention of the abdomen. On the other hand, if the trouble is low down, you get your distention and tenderness early but vomiting may be late. The diagnosis is sometimes clear, as in hernia when you have a visible incarcerated gut, but you will often have cases in which you can not rely on any one symptom or set of symptoms.

Acute mechanical obstruction is more often confounded with peritonitis than any other trouble. Especially is this true following abdominal section. The symptoms are more or less parallel, both often beginning suddenly accompanied by pain, distension, vomiting, tenderness and pressure, inability to pass gas, rigidity of muscles, rapid pulse, collapse, both may have subnormal temperature. But, as a rule, peritonitis will have a rise of temperature before the more pronounced symptoms begin, whereas in mechanical obstruction you usually have a very little, if any, rise of

temperature, and the condition begins as a rule with severe pain and without warning.

However, in differentiating between peritonitis and obstruction one should look carefully into the history of the case, examine all hernial openings, examine by rectum and vagina, make blood count, urinary examination, etc.

That form of obstruction due to paralysis or adhesions following abdominal section can often be avoided by the careful handling of the intestine and by covering all raw surfaces with peritoneum. If you do not drag upon the mesentery, paralyzing the nerves, rarely will you have trouble following abdominal operation. I believe Dr. Crile gets the remarkable results he claims from the careful handling of the abdominal viscera rather than from his combined method of local and general anesthesia.

In those cases of paralysis of the bowel following operation it is rarely necessary to do more than stomach lavage, pituitrin and eserin hypodermically, and try to get rid of gas.

The treatment for acute mechanical obstruction if seen early is simply to free the bowel and preclude the possibility of return by further operation if necessary. The operation should be done with as little traumatism as possible. If the gut requires resection and your patient is in a weakened condition, bring the gangrenous or dead part out of the abdomen, make an artificial opening in the bowel and do a second operation. If the patient is in good condition, complete the operation at one sitting.

In general peritonitis, do not rely too long upon morphine, Murphy drip, Fowler position, etc. I believe it is good surgery always to drain the bowel if your patient is much distressed and symptoms unfavorable.

Case No. 1. J. E., male, age 36, was brought to me from Alpine, Texas, by Dr. Middlebrook. Patient had been ill about 24 hours before leaving home. When seen, a tumor the size of a hen's egg was presenting in the right femoral ring, abdomen rigid, intense pain and pressure, vomiting continuously, no movement of bowels, no gas. An easy diagnosis of obstruction was made, due to the incarcerated femoral hernia. In order to reduce the bowel, the opening had to be enlarged. The gut was examined and it was found that the color changed somewhat when hot applications were applied. Consequently, it was returned. The femoral opening was closed with silk mattress sutures. Patient recovered.

Case No. 2. Traumatic Obstruction., P. Mc—was riding horseback when thrown, falling on the abdomen and had considerable pain immediately but was able to continue his trip home. Two days after accident he was brought to El Paso. I was called to see him and found a rigid condition of abdomen, vomiting, not able to pass gas, bowels had not moved after repeated enemata and purgatives, (I would like to state that I did not prescribe the purgatives, they were used by the family before I saw the patient) pulse very rapid, and slight rise of temperature. A diagnosis of perforation or severe injury to bowel was made. Dr. Richmond saw this case with me. The patient was sent to the hospital and abdomen opened. In the upper part of the jejunum a rent in bowel extending through peritoneal and partially through the muscular coats was found about 3 inches in length. The condition of the bowel was very bad, dark and greatly distended, especially at and above the seat of injury. There was considerable inflammation around the seat of injury. The rent in the gut was repaired and returned to abdomen. Patient made an uninterrupted recovery. I feel satisfied this patient would have died had surgical intervention been delayed 24 hours longer.

Case No. 3. R. M. was taken ill first with tonsilitis, later followed by an acute pain in abdomen with rigid muscles, constipation, etc. At this time he was seen by Dr. Richmond who made a diagnosis of ruptured appendix with general peritonitis. The abdomen was opened and the belly found full of a semi-purulent fluid. A drain was put in, the peritonitis continued, patient's obstruction becoming more and more acute. Patient was in an extreme condition at this time. Bowel was opened and drained. Patient began to get relief after this opening was made but had a stormy recovery as he had a general infection from his peritonitis. Later developed an empyema which required a rib resection. The artificial opening in the bowel was closed by the Coffey method. The patient entirely recovered and has had no further trouble.

Case No. 4. M. P., age 69: Carcinoma of cecum, the tumor in region of cæcum was discovered 1 year before I saw patient, by another surgeon who at that time thought it was a case of chronic appendicitis and advised repeatedly an operation. The patient declined and quit going to the Doctor. When he came to me, his abdomen was distended and he was suffering a great deal of pain as the obstruction was becoming marked. On examination, a large mass could be easily made out with probable diagnosis of carcinoma. He was sent to the hospital and the cecum and about 4 inches of ilium was resected and the colon was closed and an anastomosis made. The patient recovered nicely from this operation but about 8 months afterwards he began again to suffer from obstruction and the glands were all enlarged. A second operation was done, glands removed, an enterostomy was made. He is still living 8 months after operation but in a very weakened condition.

Case No. 5. J. Z. M., age 60, came to me from out of town. His physician, Dr. Luckett, had made a diagnosis of intestinal obstruction. We concurred in the diagnosis. Patient was suffering intense pain, having rhythmical contractions of intestines referred to umbilicus, pulse rapid, patient perspiring and collapsed, had passed no gas, no bowel movement, operation done at 1 o'clock at night. The appendix and gut were pushed into inguinal canal. There were a great many adhesions, bowel was reduced, appendix removed, patient making a rapid recovery. Dr. Cummings assisted with this case.

Case No. 6. W. M. Patient was suddenly seized with pain in abdomen. Referred to umbilical region, sub-normal temperature, vomiting, considerably distended, patient was taken to hospital, abdomen opened. An acute obstruction was found in ileum. The bowel was markedly distended above the obstruction and collapsed below. The foreign body which was probably underdone pieces of potato, was pushed through the constricted gut with a great deal of difficulty. Abdomen closed, the patient made a rapid recovery. This was a case of Dr. Craig's, who assisted me with the operation.

Case No. 7. R. H. B., 69 years of age, baggage man. Had an inginual hernia for several years. Bladder had given trouble from time to time. Was taken seriously ill September 28th, suffered a great deal of pain. Patient was seen by Dr. King who diagnosed obstruction of the bowels, incarcerated in hernial sack. Patient was sent to hospital fourteen hours after onset of symptoms. Incision made over tumor, a large mass nearly the size of two fists was exposed. It was more or less firm on palpation, a tight constricting band as if it had been tied with a string was around the pedicle of the tumor. The band was released. In the mass was included a loop of bowel, which was very dark but faintly responded to the application of heat. On opening the mass the bladder was opened which was included in the hernia. The bladder was so much distended it looked almost like a large cyst. The gut was returned to the abdomen, bladder replaced in normal position, small drain put in, opening in bladder closed about two weeks after operation. There was no infection, the repair of the hernia was by first intention. Patient made complete recovery.

Case No. 8. Miss B., age 38 years, came to El Paso 10 years ago from east Texas suffering from ulceration of the stomach, as she thought. Was treated in El Paso for several years. At times improved and at others in bed, always having more or less distension of abdomen, with vomiting spells. During attacks she had persistent vomiting with extreme distension. She was operated on for a chronic obstruction, gradually becoming acute. There were numerous constrictions of the bowel found, some of them 6 to 8 inches in length. The patient died about ten days after operation. At autopsy there were found numerous constrictions almost throughout the entire small intestines, several in the colon. Some of them were so narrow you could scarcely insert the smallest probe. She had a diagnosis of pellagra before the operation. This case was referred to me by Dr. G. N. Thomas and I think there was no doubt but that it was obstruction due to pellagra.

A DISCUSSION OF DIAGNOSIS AND TREATMENT OF INFANTILE LA GRIPPE

BY

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(Read before the Bernalillo, New Mexico, County Medical Society.)

A great deal has been written, and many investigations carried out with reference to the gastro-intestinal complications incident to hot weather, with which the pathway of infancy is beset. Child welfare organizations, women's clubs, fresh air funds and pure milk depots in our large cities have done much to reduce this menace. I believe that the largest measure of success those agencies have accomplished has been through the education of the general public, which has been carried on in our great daily and weekly papers and magazines, but in our enthusiasm about the dangers to infant life incident to hot weather, and the gastro-intestinal tract, let us not overlook another great danger, which so far has not had nearly so much consideration from either laity or profession. I refer to the so-called grippal condition, which rages throughout the fall, winter, and spring, and, while it does not claim so many infants as the former, ranks second to it alone. I might state that what we have grown to consider as grippe is not the infection of the influenza baccillus, but rather it may be an infection of any one or all of the number of organisms. It may be staphylococcus, streptococcus, micrococcus, catarrhalis, and pneumococcus; all in combination, or any one singly. The infection may be limited at the beginning to any part of the respiratory tract; may subside or spread till the whole tract is involved. In other words, we use the term grippe as a blanket, which covers a multitude of conditions, and infections. In the mild cases in which the infection is limited to a small area, we seem to be applying a more presumptious title to the common cold, while in the case which spreads from nose to throat, then chest, involves the glands in the neck, and the mediastinum perhaps sets up an endocarditis, or a myocarditis, a meningitis, or a nephritis; becomes a condition which warrants our deepest thought, and our profoundest respect. La grippe has been defined as an infection—catharrhal in character—which affects one or more divisions of the respiratory tract. La grippe is a disease that is epidemic and at times pandemic. We often read of grippe raging from Petrograd to Yokahoma, and go around either way we choose, this disease is carried by individuals. We are often the carriers. On questioning a mother about her baby who has the grippe as to the cause you will practically always find that the father, mother, one of the other children, or some one who has been

in contact with the baby has had the grippe, so that La Grippe may be regarded as a disease contracted by contact.

We encounter many cases in which the diagnosis is self evident; which the untutored laymen would recognize as readily as we, and which in fact the family and neighbors have made the diagnosis for us, and all that is wanted of us is a few suggestions as to the care and treatment. Then we find cases of a little sufferer lying in a semi-stupor, perhaps temperature of 103° to 105°, in which the throat is only slightly reddened, the chest clear as far as we can make out, the only thing we can find wrong is a little stuffiness in the nares. This condition may persist for a week or two, and, then end by either the temperature dropping and the baby clearing up, or by his making his exitus. This typhoidal type is not at all uncommon, and causes us a great deal of anxiety, as the diagnosis can only be made by a careful process of exclusion. We must interrogate the ears, kidneys, heart and central nervous system. Of course it is hardly probable that such a condition should exist without pulmonary envolvement, but the examination of a baby's chest is often unsatisfactory, and considerable lesions are often overlooked by very careful men. The pathologist often finds conditions that the clinician did not dream of.

Vomiting often occurs as an initial symptom of La Grippe. The child vomits; not from a gastro intestinal disturbance, but from a toxæmia. This can be distinguished readily by two methods; first if a child is vomiting from a gastro intestinal disturbance he refuses nourishment; if from a toxæmia he may be hungry, and will take food only to lose it. And if the vomiting is from gastro intestinal irritation, 24 hours without food, and then a proper diet instituted, the food will be retained. With grippe gastro-intestinal symptoms continue. In the absence of gastro-intestinal lesions, as they are from toxæmia and not from lesions in the tract, they may be in the lungs, the kidneys or far removed from the stomach. The fever is variable from very high to subnormal in premature or feeble babies, who are suffering from a severe infection.

Grippe has many complications; among which are otites media, retropharyngitis abscess, mastoiditis, encephalitis, meningitis, pneumonia, endocarditis, myocarditis, peritonitis, nephritis, pyelitis, and some mention appendicitis. As to this, I have never seen a case that I felt positive came from la grippe. The severity of the trouble varies with the temperament, and resistence of the individual baby. We all know babies who throw off all infection easily, others who seem seriously ill with the slightest ailment. The breast-fed baby always has a better chance than the bottle fed baby, and the baby over a year than the one under. The most far-reaching method of treatment is that of prophylaxis at seasons of the year when grippe is raging. It enters almost every household, and the affected one should keep himself or herself, as the case may be, as far as possible from the baby. This we might regard as special prophylaxis. The general prophylaxis consists in so looking after the baby as to harden him, build

up his resistence, so that he will throw off the infection, or if affected will only run a mild course. The baby should be kept out of doors as much as possible, should be given a cool sponge every day, and a rub; should be properly dressed, not too warm in summer, nor too cool in winter, nor according to stylish fads; in other words, his care should be guided by horse sense, which after all is a rare commodity.

The sick baby should be kept as quiet as possible in his crib or in his buggy; should not be taken out of doors, at least beyond the porch. As a general rule if they are running fever they should be kept in the house. If not in bed, should not be allowed to get down on the floor.

As to the medical treatment, don't over-treat, as Dr. Jacobi used to say, "don't do any harm." The nostrils may be cleansed with a weak solution of boric acid, or normal salt solution. If the temperature is high, a tepid bath or moist pack will give relief. Give all the liquids you can get the baby to take, and avoid physic as much as possible; knowing that physic will—if it does nothing else—disturb the stomach, and you must keep your little patient's nutrition up, or you will not have a leg to stand on. To relieve the temperature aspirin, phenacetin, antipyrin or aconite in very small doses give some relief. Expectorant cough mixtures should not be used. Opiates also should be left alone, except that paregoric will give some relief. We should remember that prevention is better than cure, and that careful and wise nursing are better than drugging.

THE NON-PASSIVE EXPIRATION THEORY OF BRONCHIAL ASTHMA

BY

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(Read before the 3rd Annual Meeting of the Medical and Surgical Association of the Southwest, El Paso, Texas.)

The subject of asthma is trite and full of problems. Many theories have been advanced and many disconnected facts have been discovered. But asthma still remains an enigma. Is it the result of anaphylaxis? Is it a reflex from the nose? Is it due to vessel turgescence of the bronchial mucosa? Is muscle spasm the chief factor? Or is it purely and simply a neurosis? These and many others have been the all absorbing questions.

I became especially interested in the disease going on ten years ago. I have now arrived at some conclusions which I think harmonizes many of the diametrically opposed theories and explains many of the disconnected facts and makes of asthma a comparatively simple condition. My explanation makes use of the ordinary facts of physiology, anatomy and mechanics, but applied as not heretofore applied.

To refresh your memory on points that you may not recently have thought of I call your attention to the following:

(1). A Maxim Silencer used on a rifle for the purpose of cutting down the momentum of the gases and eliminating the noise from the firing of the rifle, is constructed so that there are many blind pockets for the gases to enter and leave before hitting the atmosphere.

(2). The bronchi down to the finer endings have comparatively firm walls, because of the cartilage and connective tissue in them.

(3). The bronchiole is a tubule less than one millimeter in diameter, and with walls composed of an extremely thin layer of muscle, and a flattened non-glandular non-ciliated endothelium.

(4). A bronchiole with respiratory bronchioles, atria, infundibula, and alveoli constitute the lobule, a sort of complicated Maxim Silencer or muffler construction, for air to wander about in on its way from the remote air cells to the bronchi, trachea and outside atmosphere.

(5). Nature has wisely provided that while inspiration takes place with muscular effort under all conditions, expiration is a passive process in normal breathing.

(6). If one blows gently through the muffler of an automobile or a Maxim silencer of a rifle, there is no apparent interference with the passing through of the air; but the gases from the engine or the rifle discharged under high pressure into the muffler or silencer, as the case may be, have their passing through greatly interfered with.

(7). Or to use another illustration, a large crowd in a theatre under normal conditions passes out through the exits without haste and without blocking the aisles and exits, whereas under great haste and excitement the crowd promptly blocks the aisles and doors and greatly hinders the emptying of the theatre.

(8). So when expiration is made an active process by bringing the strong abdominal muscles into use to expel the air from the lungs, the momentum of the air will be greatly decreased and the air tension within the alveoli will be much heightened.

(9). Under normal conditions the air tension within the alveoli during inspiration is slightly less than one atmosphere and during expiration is slightly greater than one atmosphere.

(10). During forceful expiration the air tension within the alveoli may be much more than one atmosphere while that within the firm walled bronchi remains approximately atmospheric.

(11). This increased pressure is applied to all structures within the chest and will affect all thin structures.

(12). The high tension tends to cause the thin walled bronchioles to collapse, and thus further hinders the exhalation.

(13). It strikes the pulmonary capillaries, dams the blood from them to the right heart, larger veins, and thence to the tributaries which have an external pressure of but one atmosphere. The redness of the face and the swelling of the neck veins during coughing paroxysms is evidence of this. The bronchial venules and capillaries being under approximately one atmosphere pressure even during the time of forceful expirations get their share of the dammed back blood.

(14). Since the pulmonary capillaries anastomose direct with the bronchial capillaries, blood is forced to the bronchial mucosa.

(15). The high alveolar pressure is applied also to the exterior of the bronchial vein and hence facilitates the damming of the blood of the bronchial vein and thence to the bronchial venules and capillaries.

(16). The pressure is also applied to the bronchial lymph duct, and the lymph is forced into the lymph spaces of the bronchial mucosa.

(17). The pressure applied to the pulmonary capillaries as well as damming the blood to the right heart forces it onward to the left heart and aorta and causes a rise of arterial blood pressure during expiration, and the higher the arterial pressure becomes the more blood will be pumped through the bronchial vein to the mucosa.

(18). Theoretically then, forceful expirations without assistance from inflammatory or anaphylactic swelling within the bronchi might produce sufficient passive congestion of the bronchial mucosa to greatly narrow the lumen of the bronchi. This has been done. Von Strubing in 1906 published a paper in which he stated that a number of his students in good health practiced prolonged forceful expirations for a time and developed signs of occluded bronchi.

(19). The common cause of forceful expirations is inflammation and irritation of some part of the respiratory tract.

(20). Any inflammatory or anaphylactic swelling or other narrowing of the bronchial mucosa, coupled with coughing, sneezing, dyspnœa, or hard breathing of any sort or source may result in such markedly narrowed lumen of the bronchi as to produce expiratory dyspnœa, loud piping rales and wheezes, an accumulation of mucus with pellets, shreds and bronchial casts, and emphysema. This is asthma, and so far as I can see arises in no other way.

To prove that my theory is correct I ask you to experiment but a little with the next asthmatic patient that you have. If he is just a little wheezy, without being in an attack, which is best for the purpose, apply your stethoscope to his chest. You will hear the loud wheeze characteristic of asthma. Without removing the stethoscope ask him to inhale very slowly and fully several times and to exhale as before. There will be no noticeable change in the sounds. Then ask him to inhale quickly and forcibly a num-

ber of times, exhaling as before. Some decrease in the intensity of the sounds may be evident. Then have him to continue inhaling quickly and fully, and to exhale very slowly, passively and easily. After a comparatively few breaths of this character the sounds will be pronouncedly decreased and may even disappear entirely.

After this have him to inhale slowly and easily and to exhale quickly, forcibly and completely. A very few breaths of this type will promptly bring back the characteristic noises. With each new breath you will hear dozens and dozens of little whistles joining in the medley, as though new bronchi were being converted with each breath into small fifes.

There is much other evidence supporting this theory; it has been presented elsewhere, and lack of time prevents its repetition here. I am also prevented from discussing treatment because of lack of time.

IMMUNITY IN TUBERCULOSIS

BY

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(Read before the 3rd Annual Meeting of the Medical and Surgical Association of the Southwest, El Paso, Texas.)

If by the term "immunity" we mean a specific response of the living organism to the tubercle bacillus to protect it from infection or to cure tuberculosis when established, then the title of my paper is a mis-nomer. Such a specific immunity has not been demonstrated clinically or experimentally in this disease.

The conclusions arrived at on immunity in tuberculosis from the experiments of Koch, Roemer, von Behring and Trudeau point to the truth of the fact that the organism which harbors living tubercle bacilli is to a certain degree protected from reinfection but this can hardly measure up to a specific immunity in any real sense.

What Zinsser[1] says of immunity in syphilis is apparently true if we substitute the word tuberculosis. By "immunity" in the ordinary sense, we mean an increased resistance to specific infection which persists for a more or less prolonged period after the active disease has been overcome and the causative agents removed from the body. It is not easy to draw conclusions concerning this point from observations on human beings, since it is most difficult to decide whether or not a given case is cured in the bacteriological sense; for tuberculosis is pre-eminently the disease in which there occur frequent and prolonged latent periods terminated, often after lapses of years, by the reappearance of foci of a grave nature. It is apparent that resistance to tuberculosis differs from that acquired in

many bacterial infections chiefly in the fact that it does not persist after the disease is over, but probably co-exists only with the presence of the living incitants in the body. Complete sterilization of the body is probably rare, possibly does not occur at all, and the apparent immunity to reinfection is an evidence of persistance of the disease in a latent form.

The theory of infection in childhood, with complete cure, leading to some degree of general immunity to reinfection in after life is indicated by certain clinical observations, but is as yet not proven experimentally. Lewis says: "My personal feeling is that localized tuberculosis in early life probably has little influence on the disease as it presents itself in adults. With bovine vaccination immunity as an influential factor seems not to persist much longer than do living bacilli introduced as a preventative."

As to acquired immunity by the employment of any known tuberculin product it can only be said that none such has been demonstrated. In fact, according to Austrian's experiments, animals previously treated with tuberculin were more susceptable to subsequent innoculations with living tubercle bacilli than were untreated control animals[2]. In the tuberculous animal the essential effect of tuberculin is the focal reaction or the inflammatory changes that take place in and about existing tuberculous foci. These inflammatory changes consist in congestion or if severe enough, necrosis and softening. Such a focal reaction, following a tuberculin reaction, establishes a better circulatory give and take between the tuberculous focus and the animal organism, and unlocks the focus. The resultant symptoms of a general reaction may be due merely, as Krause points out, to absorption of tissue products of the animal, either normal or pathologic, which are primarily toxic for the organism. Tuberculin is not specific in this action as physical strain, intercurrent disease, or certain drug action may produce circulatory conditions about the tuberculous focus that favor increased absorption.

Also tuberculin tolerance is by no means an immunity in the biological sense since so far as can be determined no antibodies to tuberculin are formed. In the face of tuberculin tolerance lesions may continue to exist and even to progress.

As to the phenomena of reactivity to products of the tubercle bacillus, infection and the presence of a tuberculous lesion seems necessary.

The defense of the organism against the tubercle bacillus would seem in no strict sense to be a specific immunity but rather a complex of its habitual defensive reactions. The organism offering one mechanism of defense after another to the invasion of the germ and its toxins.

The work of von Pirquet demonstrates the establishment of sensativeness of skin and mucous membranes following the penetration of these membranes by living tubercle bacilli, either through immature or undeveloped epidermal layers or through fissures in these membranes. Such a development of sensitiveness does not necessarily denote a specific me-

chanism of immunity, as it is such a response as is uniformly called out by the invasion of a certain class of disease producing bacteria. Such reactions have been obtained with the extracts of the bodies of the infecting bacteria in such diseases as glanders, typhoid fever, syphilis and lobar pneumonia.

As Krause has lately demonstrated by animal experimentation cutaneous hypersensitiveness to tuberculo-protein is inaugurated by the establishment of infection and the development of the initial focus; that it increases with progressive disease; that it varies directly with the extent and intensity of the disease; that it diminishes with the healing of the disease; that it is probably never entirely lost (except in the presence of intercurrent disease, pregnancy, etc.); that it is increased by reinfection; that it is diminished or completely wiped out during the period of the general tuberculin reaction[3].

Such sensitiveness may be the important factor in so-called "racial immunity." This mechanism of defense called into play frequently under civilized conditions of congestion of population with the resultant exposure to many bacterial diseases may become highly developed from this very circumstance. Such a mechanism, highly developed by frequent use, not specific but uniform, might tend to be transmitted.

The lymphatic gland defensive reaction to the invasion of the tubercle bacillus is parallel to such reaction with other bacteria. The different glandular groups, cervical, tracheobronchial and mesenteric act as more or less perfect, barriers to invasion.

As to the defensive properties of the blood here too a general germicidal reaction of varying degree has been demonstrated which includes the tubercle bacillus. The result of most intensive investigation has demonstrated that certain specific amboceptors exist in the blood of tuberculous subjects. Yet the attempted demonstration of the relation of such substances as precipitins, agglutinins and opsonins to the course of the disease has been most variable and contradictory. The history of the attempts at passive immunity is an instructive one along this line, as it has been one of extravagant claims later refuted by accurate study.

As to the strictly specific nature of the defensive reaction at the site of tubercle formation it is to be borne in mind that these local changes depend for their production upon two sets of agencies; first, the influence exerted by the tubercle bacillus *simply as a foreign body*, to stimulate the vital functions of the invaded organism and its proliferative capacity; second, the influence exerted by its toxins.

"The term tubercle tissue," as Delafield defines, "indicates a tissue formed under the influence of the tubercle bacillus rather than a tissue which is morphologically characteristic of tuberculosis in distinction from other forms of new tissue."

It has been demonstrated that chemical irritants injected into the lung produce an inflammatory reaction closely rseembling an active tuberculous focus.

The present research into the field of local cell and tissue immunity in tuberculosis has not as yet yielded established results and conclusions.

The elimination of toxins becomes an important defensive reaction in the face of established tuberculous disease, associated with toxæmia. Here again the function of elimination takes place through the mechanism of the usual excretory channels, kidneys, alimentary canal and skin. Vaughn says of parenteral foreign protein in general; it may be eliminated through the kidneys; it may be passed into the alimentary canal and there digested; it may be digested parenterally.

In conclusion a practical clinical deduction might be drawn from the outline of this paper that in the acute phases of a tuberculosis, with symptoms of toxæmia more or less marked, more emphasis is indicated in treatment to the direct stimulation of all the excretory channels.

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THE CLAGUE ELECTROLYTIC TREATMENT OF LEAD POISONING

BY
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(Read before the El Paso County Medical Society, April 2, 1917.)

I do not intend entering into the details of the etiology, pathology or symptomatology of lead poisoning, but will demonstrate to you the operation of this system, and report the results that we have had during the past year in the treatment of five cases which have come under our care.

Lead poisoning was much more prevalent formerly than today. Painters' colic and type setters' colic about 20 years ago were very frequent in occurrence, but owing to the change in the constituents of paint and the introduction and general use of the linotype machine, we have eliminated two of our greatest causes of such poisoning. Among the industries such as smelters, glass factories, etc., we still have some manifestations of the disease, but owing to the educational work which has been done through the establishing of welfare departments in practically all manufacturing industries, and the efforts they are making to protect their workmen from

the so-called industrial diseases, the element of danger has been reduced to a minimum. However it does occur in many of the best regulated and best managed manufacturing concerns where the employees are compelled to handle lead constantly, or work in its fumes.

In the methods of treatment of this condition, prior to the use of electricity, the principal was, that of elimination, working upon the basis that the lead contained in the body must be first dissolved and put into a form where it could be eliminated, either by the skin, kidneys or bowels. This method consisted of such eliminates as potassium iodide, magnesium sulphate, sulphur and hot baths. In addition to this the treatment given was simply for the amelioration or relief of the immediate symptoms; morphine for the colic and spasmodic pains, and bromides when we had to deal with encephalopathic or arthralgic manifestations. These methods were extremely slow in giving results, particularly so in the cases of chronic poisoning; which had resulted in chronic constipation, anemia, wrist drop and cerebral and joint manifestations. Months were required for the treatment and it was four to eight months before the blue line on the gums, wrist drop and anemia were relieved.

More than ten years ago Dr. H. L. Jones of St. Bartholomew's Hospital reported satisfactory results in the treatment of chronic lead poisoning through the use of the electric bath. The method which he used was that of putting the entire body of the patient in a bath, then charging the bath electrically. By this means of treatment he demonstrated that electricity was a valuable aid in the elimination of lead from the system, and while his results were more rapid than those obtained by the older methods of treatment, yet the process was very slow.

The method of treatment which we are now demonstrating is that which was perfected by Sir Thomas Oliver, of London, as suggested to him by T. M. Clague, chemist, also of London.

This system is simply an adaptation of the old principle of electrolysis as used in electroplating. When an electric current is passed through a solution of salt, the acid collects at the point where the wire comes in, and the base, which in this case is lead, goes to the negative pole. This same principle has been practiced for years as a method of introducing iodine and other drugs into the body.

Mr. Clague suggested that instead of immersing the patient's body in a bath, and then electrifying the bath the bi-polar system be adopted, placing the patient upon an insulated chair, with the feet in a basin containing salt solution, 15 grains to the pint, the hands in a similar basin connecting the positive pole of the current to the foot basin, and the negative pole to the hand basin. The voltage employed is 16, and from 20 to 40 minutes daily, or every second and third day, depending upon the severity of the case. In ordinary cases the treatment should be continued for a period of at least 25 days. If given as a method of prophylaxis for

those working constantly in lead, but having shown no symptoms, one treatment a week is sufficient. In severe cases, those showing wrist drop or encephalopathic symptoms, the treatment should be carried on for a period of 60 days or more. There is absolutely no discomfort to the patient during the treatment except a slight tingling sensation at the line of junction of the hands and feet with the salt solution.

Among the many experiments which Dr. Oliver reports, and which appear in the London "Lancet," was with a rabbit, as follows: "This animal a male, was given a solution of nitrate of lead dropped into the back of its mouth from a pipette. In the course of three years it received 1095 grains of lead. Some months after taking the drug the animal became painlessly paralyzed. It was treated electrolytically by the two-bath system, the fore feet being placed in one bath, the hind feet in the other, the positive pole being placed in the hind-foot bath, and the negative in the fore-foot bath. Under this method of treatment the animal recovered the use of its limbs. In a few days it was quite well again. The administration of lead was resumed, and in the course of nine or ten months the animal again lost the use of its limbs. Treatment by the double electric bath soon restored the rabbit to its former health and vigor."

The following is a brief record of the five cases which we have treated during the past year:

Case No 1. Has been an employee in this plant for 5 years, previous to which he had never worked at any employment where he had contact with lead. During the past three years he has had three or four attacks of plumbism, which were manifested by colic, loss of appetite, vomiting and obstinate constipation. This patient had been treated for lead poisoning along the usual lines: elimination, catharsis, potassium iodide and tonics. When he reported for treatment the last time, he had the marked blue line on the gums, anemia and chronic constipation. He was given 8 treatments of 30 minutes duration, 25 mill-amperes. After the 5th treatment the blue line on the gums had disappeared, his bowels were moving regularly, and he returned to work, and only reported for 3 more treatments, giving the excuse later, that he was well, and there was no necessity for him to come for other treatments. We requested this man to come to the hospital for treatment for a period of 2 or 3 weeks, but he seemed to think that further treatment was unnecessary.

Case No. 2. This man worked at the furnaces, and had been coming to the hospital weekly during the past 3 years for purgatives and tonics. Was extremely anemic, and for the past 2 weeks had been unable to work on account of his weakened condition. Had the blue line on the gums, chronic constipation and anemia. He was given 8 treatments, after which he did not report to the hospital for about 3 weeks, when he came asking for medicine on account of a cold. When we asked him why he had not reported for treatment for his lead poisoning, he said he felt that he was cured; however, at this time he still had a slight blue line on the gums, but did not think he needed further treatment.

Case No. 3. Has been employed in lead smelters for the past 20 years: is a chronic alcoholic. For the past 5 months has been unable to work on account of pains in the joints, muscles and head, together with cerebral symptoms, which had been diagnosed as a case of brain tumor, and operation recommended. He gave all the above mentioned symptoms, together with the marked blue line on the gums, and the history of having worked for years in lead. After 18 treatments given daily, of 30 mill-amperes, 30 minutes duration, he did not report for treatment stating that he was entirely cured, and took a position in Mexico at his old work as a furnaceman.

Case No. 4. Has been in the employ of the smelter for 10 years, working at the furnaces. During the past 3 years we had treated him twice for lead poisoning by the usual methods of elimination. Three months prior to the commencement of of this treatment he had a typical attack of epilepsy, being unconscious for 30 minutes. Since then he was unable to work. Had the blue line on the gums, chronic constipation, dizziness, extremely anemic, hemoglobin test of 70. The day he presented himself at the hospital for treatment, when this hæmoglobin test was made, he was given 2 ozs. of magnesium sulphate, and given his first electrolytic treatment. On the 5th day of his treatment the blue line from his gums, had entirely disappeared, and he reported that his bowels were moving regularly without purgatives. He came daily for treatment for 27 days. On the 25th day of treatment his hæmoglobin test was 80, he had gained 7 pounds in weight, and was apparently perfectly well.

Case No. 5. This man had been in the employ of lead smelters in Mexico for about 10 years. Had worked at our plant for 3 months, when he came to us, giving the following history: During the past 3 years he had had a number of epileptic seizures, which always came on at night, but with no regular periodicity: had no premonition as to when the attacks would occur, and had never had an attack while on duty. We advised that this man be discharged, on account of the possibility of his having such an attack while at his work. He had none of the positive symptoms of chronic lead poisoning, excepting his history of having worked in lead, having lost weight, and a marked appearance of anemia. He was given 35 treatments, of 35 minutes duration, 30 mill-amperes. After the first week of his treatment he voluntarily stated that he felt better than he had felt for 3 years. Since the commencement of his treatment, which was completed 5 months ago, he has gained 30 pounds in weight, and is now able to do a class of work which was utterly impossible for him at any time during the past three years: has not had an epileptic seizure since the beginning of this treatment. We do not claim that this treatment has cured his epilepsy, as we have not had enough experience yet with this treatment to know what it will do in cases of saturnine encephalopathy, but it is our opinion that this was a case where the elimination of the lead has relieved entirely the brain symptoms.

We are now using this treatment among all of our employees who are in any way exposed to lead, and who show any of the symptoms of lead poisoning, such as anemia, muscular weakness, chronic constipation and headache, with or without the blue line on the gums, which is so pathognomonic of lead intoxication. From our limited experience during the past year, we believe that the electrolytic system, used as a method of prophylaxis and treatment, is one of the most valuable adjuncts at our command in the treatment to combat this one type of industrial disease.

SOME RAMBLING THOUGHTS ON IDIOPATHIC EPILEPSY

BY

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(Read before the 3rd Annual Meeting of the Medical and Surgical Association of the Southwest, El Paso, Texas, December 9, 1916.)

Epilepsy has been known from the earliest period of antiquity. It is mentioned in mythology as the "sacred disease." The demigod, Hercules, because of his mortal birth, incurred the hatred of Juno, and was struck by the hand of Lyssa, daughter of Night, and personification of madness, with the "sacred disease" as described by Euripides in his tragedy, "The Phrenzy of Hercules." During an attack of this malady Hercules murder-

ed his wife, Ophelia, and his children, then fell into a profound sleep, but on awakening had no recollection of his horrible deed. This shows that the early Greeks recognized in the epileptic a tendency to do criminal and violent acts.

Hypocrates described the symptom-complex, constituting epilepsy, as closely and accurately as any of his followers. Lucretius, the Roman poet, described the disease in the first century B. C.

All modern epileptologists are agreed that the presence of epilepsy in any individual is practically always evidence of subnormality, yet history records a fairly goodly number of notable exceptions, among whom are St. Paul (?), Julius Cæser, Peter the Great, Cromwell, Napoleon, Duke of Wellington, Lord Byron, Hamilton, the astronomer and mathematician, Mozart, Handel, Mendelsohn, and Swedenborg. Dana declares very emphatically that "true epilepsy is not compatible with extraordinary intellectual endowments." The geniuses mentioned above may have had symptomatic, but not idiopathic epilepsy.

The conception of the epilepsies, brought about by the profound study of such men as Shanahan, Munson, Spratling, Weeks, Peterson, and many others, has so enlarged our horizon, showing the disease to be so complex and many-sided, that it is indeed difficult, if not quite impossible, to give an adequate definition. Shanahan's definition meets best the modern conception: "Epilepsy may be defined as a symptom complex, chronic in nature, characterized by recurrent, abrupt attacks of impairment or loss of consciousness, with or without convulsive phenomena, and usually resulting in mental and oftimes physical deterioration."

The time is too brief to go into the many phases of the subject with thoroughness, but I trust that I may bring out some points in etiology, prophylaxis, and especially in the general management of the disease, that may be of value. If so, I shall feel repaid for the time spent in going through the literature of the subject.

"The concensus of opinion today is that true epilepsy is indicative of a neuropathic family degeneration. There are often present other hereditary degenerative conditions, such as stammering, backwardness in walking and talking, delayed dentition, deafmutism, imbecility, etc."

The disease is essentially one of early life, eighty-five per cent of the cases appearing before the twentieth year of age. This establishes the fact that a defective inheritance influences adversely the developmental stage. True, a few cases develop late in life, but we generally find some cardio-vascular trouble with syphillis or alcohol as causative factors.

The etiology is still shrouded in semi-darkness, but recent studies are throwing light in the dark places. The theory of autointoxication as a cause has much to recommend it. The convulsions produced as a result of the exanthemata, acute infective diseases and other toxic states are often

regarded as manifestations of an acute epilepsy. So also an epilepsy may follow trauma.

Most practitioners regard such peripheral irritations as are produced by eye strain, diseased tonsils, adenoids, adherent prepuce, etc., as the starting point of many epilepsies. These causes are not adequate, except in those predisposed by a pschyco-neuropathic inheritance. However, in the management of a case of epilepsy all possible causes of irritation should be diligently sought after and removed if possible. A habit should not be allowed to develop. Hence, eclampsia in infancy due to such simple causes as dentition or gastro-intestinal irritation, should not be passed over lightly. Such children at least have unstable nervous systems, and should be under the guidance of the family physician for years.

I have mentioned trauma as a cause, but in the majority of cases it is but an incidence, else practically all of us would be epileptics. I feel very strongly that the fundamental cause is in some unknown brain cell defect, and that our hope in the future lies in the management of these cases in such a way as to prevent the actual outbreak of the symptoms by (1) the removal of all possible exciting causes; (2) by a proper dietary, and attention to every hygienic measure, such as fresh air, exercise in the open air, supervision of the educational and vocational methods employed; recreation and suitable amusements, and also by the exercise of firm discipline which is important in developing self-control. If these methods are carried out with the same earnestness and thoroughness as is done the world over in the management of tuberculosis, we may witness really brilliant results. As the tubercular can only be managed well in a sanatorium, so also the epileptic should be segregated if we are to have better results in the future than the past. The per centage of cures in the past was estimated at about four per cent.

The improved methods instituted at the Craig Colony show from seven per cent to ten per cent of cures. In view of the fact that many cases sent to the Colony were advanced ones, having been treated elsewhere for varying periods, it is indeed an encouraging showing.

The hope of cure in epilepsy, as in tuberculosis, is greatly enhanced when the cases are brought under proper treatment early. It seems to me the ideal place—the only place for the proper treatment of the epilepsies is in an institution or colony where there is constant medical supervision. After all, perhaps, it is not so much the *cure* of an epileptic that is sought after, as it is the providing of a place where he may be trained to do something useful, be happy and contented, and live out his life under pleasant surroundings, protected from harm and stress.

Epilepsy is a much more common disease than is generally supposed. Many of the mild cases, and the psychic equivalent ones are unrecognized for years. It is perhaps no exaggeration to say that there is one case in

every three hundred of the population. Calculating on that basis, there are 330,000 cases in the United States.

If epilepsy is ever to be blotted out, the prevention of marriage of the epileptics must be brought about. True, some of the States have enacted laws making it a crime for any one to marry an epileptic or defective, still as long as they are at large, they will marry and be given in marriage, and procreate their kind. The best solution of the problem is for each state to provide a colony or colonies for the segregation of all cases. The state owes it to their poor unfortunates as much as to the insane, deaf, dumb and blind. From an economic standpoint, it would be profitable, for about fifty per cent could be employed in useful trades, thereby turning back to the state a goodly share of the cost of maintenance. These cases are wholly unable to cope with their fellows in society and become a burden and a sore trial to their relatives, or else drift into vagrancy or crime. It has been shown that the epileptic criminals constitute ten per cent of the defective criminals.

Following down through the centuries we find that nothing was really done in a rational or humane way for the epileptics till comparatively recent years. Even death was meted out to these victims because of a misunderstanding of the ailment.

Public Care of Epileptics

There are now thirteen states that make provision for the care of these epileptics. The first special public institution for epileptics was established as recently as 1867 at Bielefeld in western Germany. This was called the Bethel Colony. In 1892 Ohio opened her institution at Gallipolis. From these beginnings the number has grown splendidly. Germany has fifty institutions having a special provision for epileptics. England has nine, Switzerland has three, Holland two, and Belgium also makes provision for epileptics. Australia has an institution.

The Craig Colony, located at Sonyea, New York, was established in 1892. It was so named in honor of Oscar Craig, President of State Board of Charities. This institution has perhaps done more to advance the study of epilepsy than any other agency. Dr. William P. Shanahan is the Superintendent and Dr. J. F. Munson the Resident Pathologist. These gentlemen are recognized authorities the world over, and have made of the institution a model from which others may copy with profit. The institution gives scholastic, manual and some physical training under direction of five teachers. Instruction in music is given by a resident band-master, there being a patient's band and patient's orchestra. Due attention is given to amusements, recreation and out-door sports. Fifty per cent are employed in useful and congenial occupations, and the remainder, owing to mental and physical defects due to the epilepsy, are unable to perform labor. That the segregation of epileptics in colonies is the ideal method

scarcely needs an argument to prove. Experience has shown that the inmates of the colony are happier and better contented than under any other environment. It is a strange, yet beautiful thing that there exists a strong bond of sympathy among epileptics. One epileptic will watch another through a seizure, safe-guarding and protecting him so far as possible.

Second only to the valuable work of the Craig Colony, is that of the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics. This Association has carried on research work, as well as campaigns for the establishment of colonies in the various states.

I quote from a paper by Dr. Shanahan in which he summarizes the etiological factors as known today:

"(1). When epilepsy, feeble-mindedness, insanity, alcoholism, criminal tendencies, etc., are present in antecedents, a deleterious influence is brought on in a percentage of descendants, especially in the direct line.

"(2). This deleterious influence manifests itself, either by mental defectiveness, physical abnormality, or as one of the symptoms complex, such as epilepsy, insanity, etc., or what is more common, some combination of these conditions.

"(3). The distinctive influence of alcohol, syphilis, various infectious disorders, etc., on the central nervous system is unquestioned. These pave the way, often times, for epilepsy in the individual himself, as well as in his progeny.

"(4). The epilepsies are, as a whole, but evidence of the subnormal individuals.

"(5). While there are no positively confirmed facts available, it is a quite general concensus of opinion that the symptoms complex, epilepsy, is of a toxic origin. The cell changes in epilepsy lend much force to the opinion. Some disturbance in the normal relation between the various ductless glands and the rest of the human economy seems in some respects to offer a solution of the cause of the phenomena peculiar to epilepsy. The various changes found post-mortem in the central nervous system can be looked upon as but the results of the symptom complex, serving, prehaps to perpetuate some of the symptoms, *but not the actual cause of its development.*" (Italics mine.)

I take the liberty of making quotations from an interesting personal letter from Dr. Munson, of the Craig Colony, bearing on etiology and treatment. His letter sets a splendid example of open-mindedness. Too often writers twist the facts to confirm preconceived ideas. Dr. Munson says:

"I would suggest that you give especial attention to the epileptic personality. The presence in almost every case of psycho-genetic factors is becoming more evident every day. I have heretofore contended against

this view, but of late have come to find that such influences have a definite role to play—probably not the sole role in producing seizures, but at least an important one, and one which for therapy is of great importance. There is much of the psycho-genetic theory that I am not prepared as yet to admit, but there is undoubtedly an interesting relation between disturbing events in the patients' environment, and the occurrence of seizures. The epileptic cannot adapt himself properly to his environment, and his struggles to do this, and his failure to succeed are often followed by attacks. The ultimate psycho-sexual character of the epileptic is still extremely doubtful to me.

"The general management of a case is no longer a question of sedation. Where formerly, for a fewer number of patients, we bought a half a ton of bromides in a year, now we get along with about fifty pounds for more patients, and the same period of one year. Along with this marked reduction of bromide medication, the average of seizures has remained almost unchanged, except to be somewhat lower.

"Etiology is still an unknown matter. The inheritance of epilepsy, and the epileptic personality are being actively worked out, and beautiful family trees are being constructed, but the exact meaning of these researches is still not clear. In regard to the Reed bacillus, our work is at present too small to make definite statements, but our impressions are decidedly against such an infectious nature of the disease."

Pathology

The real pathology of epilepsy is at present unknown. In all cases there is some inherited organic defect in the nervous system, the precise nature of which cannot be determined by our present means of research. The resulting instability renders the individual liable to symptomatic phenomena known as epilepsy. These phenomena are excited by causes which would not be operative with a stable nervous system, and when so excited would tend to recur.

Diagnosis

The diagnosis of this malady is quite easy in the majority of cases, still in many cases of hysteria it requires months and even years of careful observation to make a satisfactory differentiation. Then, too, the mild and psychic epileptic equivalant cases require careful thought and observation to arrive at a correct diagnosis. Only by an early diagnosis, and a thorough appreciation of all the factors entering into the causation of the many-sided malady, can a cure or even an amelioration be looked forward to with any reasonable degree of hope.

Management

Since only about two and one-half per cent of all cases of epilepsy in the United States are being treated in institutions and colonies, it is quite evident that a great responsibility devotes on the general practitioner

in the management of these cases. How best can he manage these cases? First, he should remember that it is a chronic disease, requiring a long period of treatment. This should be explained to the family, and their co-operation sought. As in tuberculosis, without the patient's and family's co-operation, little can be accomplished. No drug nor serum has yet cured a single case. Each individual should be studied—his family history should be gone into with great thoroughness. Discover all there is to be learned about his parents, grandparents, grand uncles and aunts, his cousins, his uncles and aunts. Search carefully for all possible exciting causes, such as have already been mentioned, and remove them if possible. These causes, if not actual factors in perpetuating the malady, at least act deleteriously on the general health, and their removal makes for an improvement in that particular. This is important, as the disease tends to produce physical, as well as mental deterioration. Bring about *good* hygiene in its broadest sense. This includes a dietary adapted to the individual's needs. Care of the bowels (there seems to be a tendency to constipation in the majority of the cases); care of the skin, which is an important, but too often neglected eliminative organ; out-door exercise and plenty of fresh air in the bedroom at night; mental training with the young to inhibit the tendency to deterioration. It has been found that out-door work, not too strenuous, brings about physical improvement. Certain cases need a nurse, or an interested attendant. Provide proper amusements and recreation. These cases should be treated at their homes where the physician may discover and correct errors in management. The seizures should be prevented so far as possible, but not by producing profound sedation as has been done in the past. That dangerous condition, status epilepticus, should be watched for and guarded against, so also other complications, such as œdema of the lungs and pneumonia should receive prompt attention. The drugs which have been used in the treatment of epilepsy are legion, yet but one is deserving of more than passing notice. True, certain drugs are useful in combating certain symptoms, and in the treating of complications, but the only ones which seem to exert any favorable influence in bringing about amelioration of the symptoms are the bromides. It is my belief that far more harm has been done by the use of bromides than any good accomplished. This has been because of excessive dosage. We have all witnessed the bad results of the large dosage of this drug—the dull, listless mind, coated tongue, foul breath, anorexia, acne, emaciation, faltering speech, tottering gait and failing strength. But notwithstanding these untoward symptoms produced by this drug, I still believe it has a place in therapy in certain well selected cases. However, the dose should be small, and given with a relatively salt-free diet. Much can be done along the lines of prophylaxis. Craig Colony statistics show that ten per cent of the cases have birth palsies. This calls for better obstetrics. The family physician should advise strongly against marriage. He should inform parents of the importance of not neglecting the eclampsias of childhood. Children with a

neuropathic taint should receive special care and attention. All possible causes of peripheral irritation should be removed. I believe that if the family physician manages his cases along these broad hygienic lines, that he will be fulfilling his duty to these poor unfortunates.

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HERPES ZOSTER OPHTHALMICUS, CASE REPORT

BY

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The following case is reported not on account of any new pathological findings or methods of treatment, but rather to give it a place in the literature where any one collecting a series of cases for study could avail themselves of it.

Herpes Zoster Ophthalmicus, or Zona Ophthalmica, commonly called Shingles, is an acute specific disease of the nervous system characterized by an eruption of vesicles upon inflamed bases, over the area supplied by branches of the ophthalmic, or first division of the trigeminal nerve. The branches usually affected are the supraorbital, supratrochlear, and lachrimal and, less frequently, the nasal. The inflammation which arises without any obvious peripheral or central cause, is located in either the trunk of the nerve itself or in the Gasserian ganglion, or in both nerve and ganglion.

That Herpes Ophthalmicus is a rare condition is asserted by Chance[1] who states that amongst 30,477 cases of all forms of diseases of the eye that came to the clinics of the Wills Hospital in the years 1913-1914 only five were cases of Zoster Ophthalmicus.

Case History. H. V. Z. Age 34, American. Well nourished man had been in sanatorium for three months with early tuberculosis. Has had chronic middle ear trouble for one year, both drums perforated and hearing about 50 per cent normal. Slight discharge from ears only at rare intervals. Some tendency to intermittent occlusion of nasal passages with flecks of blood expelled upon handkerchief in morning toilet. First complained of an iritating neuralgia involving the right side of

forehead and extending down toward the mastoid process. This became more severe and was followed by a crop of vesicles over right brow, forehead, scalp and edge of upper lid. The tip of the mastoid was specially tender and before the vesicles appeared gave rise to some apprehension of an acute mastoid condition.

During the period of vesiculation the patient was extremely sick and prostrated, with a foul breath and constant nausea. This peculiarly foul odor came suddenly and left completely a few days later when the patient had begun to improve. Temperature rose to 100°, pulse 120-130. The upper and lower lids were swollen and after the first or second day it was impossible to inspect the cornea. During the height of the infection a crop of pin point vesicles appeared upon the abdomen and back, these were not numerous, were irregularly placed and appeared upon a non-inflammed base. These disappeared, forming no crust. At this period the patient presented an appearance of an alarming infection and if it had not been for the positive diagnosis of herpes with its favorable prognosis, considerable apprehension would have been felt.

Treatment

The pupils were dilated with a 1 per cent solution of atrophine, cold compresses later changed to ice compresses were applied to relieve the swelling of the lid and the pressure on the globe. Sodium salicylate was given in free doses. Morphine was used to control pain and restlessness.

The acute condition lasted about one week, followed by a comparatively rapid convalesence. The cornea was not involved. Some pits remain at the present time over right brow.

Conclusions

Herpes Zoster is an acute infection which can be differentiated from other acute conditions only by a vesiculation following well defined nerve routes. Ice compresses are indicated from the very first in Herpes Ophthalmicus to mitigate the odema of the lids and allow inspection and treatment of the cornea in case vesicles form in that locality.

In this case the nasal branch was not involved although at times there were slight twinges of pain radiating down the side of the nose. No vesicles followed. The concensus of opinion seems to be that in cases where the nasal branch is involved the cornea is much more apt to be involved.

(1) Herpes Zoster Ophthalmicus, Burton Chance, M. D. Annals of Ophthalmology, Oct., 1915.

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EDITORIALS

YOUR AGE! HOW OLD ARE YOU?

Never in the history of this country has this question been of such vital interest to so many people as it is today.

Never before has the United States Government been so deeply interested in knowing the exact ages of the young men of the land.

So that never before has the public mind been so ready to grasp the great importance of complete birth registration.

In ordinary times as the years go by and problem after problem is taken up and settled our civilization grows, growing ever more rapidly as they are taken up.

In ordinary times the continual demands upon our attention easily explain the temporary side-tracking in so many states of the problem of COMPLETE BIRTH REGISTRATION. It is not because the people believe it unimportant, but the problem has simply been crowded to one side until a more favorable day.

When the story is told of the American arrested in London as a German spy, unable to obtain a birth certificate because his birth had never been recorded and because the doctor had died, but finally saved by the discovery of an old letter which told of his birth, the people grasp the point and agree that births should be registered; but as the story relates to somebody far away, somebody unknown, and probably never heard of before, the point is soon forgotten and no wave of strong public opinion is ever really started. So too the statements that birth records are needed to prove men of voting age, to establish old age pensions and pensions for the children of soldiers, to establish rights of inheritance, to determine how efficiently the states are protecting the health of the children, and to determine who is entitled to the protection of OUR FLAG—these statements are too apt to be treated as old axioms which call for no immediate reform.

The need for complete birth registration is recognized, but the inertia of the people still prevails.

Thus in ordinary times the problems of civilization are settled slowly, but not so in time of war or after great catastrophes. Then the emergency or bitter experience brings quick results.

The city devastated by fire is so rebuilt as to guard against a second conflagration.

The terrible loss of life which follows overloading an excursion steamer soon results in more stringent laws and in greater safety for future travelers.

And today—this WAR CALL for the registration of our young men brings home the need of birth records to every community and to almost every family in the United States.

How Old Are You?

Can you prove that you are under 21 or over 31, or must you forever be suspected of having falsified your age?

Perhaps a fond mother to save her son from the horrors of the trenches may swear that he is below the age limit; perhaps years later proof will be found that this man should have registered; imagine his chagrin at not having done his part in the WAR.

Perhaps there are slackers who in the absence of birth records may be able to shirk registration.

Surely on this day the need of complete birth registration is evident to all.

May we not hope that this call for the registration of all men between the ages of 21 and 31 will awaken the people from their lethargy and lead at once to this forward step in our civilization—the REGISTRATION OF EVERY BIRTH.

If you are interested and wish to know how to obtain better birth registration in your state write to the United States Census Bureau.

"Hygiene is the art of preserving health; that is, of obtaining the most perfect action of body and mind during as long a period as is consistent with the laws of life." So wrote a man who devoted all his adult life to the promotion of the public health and who died at the age of 56 of pulmonary tuberculosis. Edmund Alexander Parkes, born March 29, 1819, physician, surgeon, sanitarian and author left perhaps a greater impress on sanitary science than any Englishman of the nineteenth century. His work ranges from the theoretical consideration of the minutest details of chemical and physiological research to the practical consideration of the cleansing of a sewer or the lightening of the soldiers' knapsack. India, the Crimea and London saw his labors and benefited thereby.

War brings some good things in its train. Just as the Napoleonic campaigns perfected the art of transporting the sick, and the loss of life from preventable disease in the Spanish war quickened the sanitary conscience of the American people, so the horrors of the Crimean campaign made Parkes a professor of military hygiene. He organized a complete course of instruction based on the principle that the student must be able

to apply practically the lessons which he learned. Many of the sanitary reforms which he inaugurated are now bearing fruit in the improvement of the well-being of the community at large.

Health is the efficient reaction of the mind and body to its environment. Self interest, state-benefit and pecuniary profit require that the whole nation be interested in the proper treatment of every one of its members and "in its own interest it has the right to see that the relations between individuals are not such as in any way to injure the well-being of the community at large." This is being realized in the United States today as never before, and on every hand the general government, the state and local health authorities and the general public are seen striving toward the accomplishment of this ideal.

No country, no race, no sex, no color is immune to tuberculosis. Similarly no tissue, no member, no portion of the human body is immune to its inroads. The catholicity of the disease, both as to people and tissues brings about strange results. Tuberculosis of a bone or a joint is very different in its manifestations from tuberculosis of the lungs, the skin or the brain. When some of the internal organs are attacked, for example, the suprarenal capsules, the consequences are even at wider variance from the commonly conceived picture of the devastations of that minute vegetable, the tubercle bacillus.

Thomas Addison, sprung from the English yeomanry of Cumberland, physician, teacher, student and diagnostic genius, carried on a series of observations for years before he found that tuberculosis was often at the root of the disease which now bears his name. Addison's disease, generally caused by tuberculosis of those little organs which lie just above the kidneys, is marked by extreme prostration, bloodlessness, a marked bronzing of the skin, and death. There may be other symptoms, but the weakness, anaemia and skin pigmentation are the most prominent.

The dogged determination which marked Addison's attempt to track a disease to its original source is the ruling spirit of 20th century medicine. No half-discovered fact will satisfy the modern investigator. The ultimate object is sought in its entirety by an industry of search, a correlation of scientifically deducted facts and a concentration of effort. Addison was born in April, 1793, and died of brain disease, June 29, 1860.

A recent investigation of the causes and prevalence of miners' consumption among the metal miners in Southwestern Missouri forms the subject of Public Health Bulletin No. 85, issued by the U. S. Public Health Service..

Miners' consumption consists essentially of a mechanical injury to the lungs due to the prolonged inhalation of hard rock dust. It has been recognized as being prevalent in some American mining districts, particularly in the Joplin zinc and lead districts. It was to determine its actual prevalence, and its relationship to pulmonary tuberculosis that the investigation was undertaken.

In the Joplin district certain mines are known as "sheet-ground" mines, in which the ore is found imbedded in an exceedingly hard flint. In drilling and other mining operations this flint rock is finely pulverized. The minute rock dust particles enter the lungs, in the process of natural breathing, and by their irritating action

cause the formation of fibrous, or scar-like, tissue. The effect of this is to lessen the lungs' ability to expand and contract, with the result that the victim first notices that he is becoming short winded. With continued exposure to this silica containing dust, the difficulty of breathing increases, until the miner is no longer able to perform active physical labor. It was found also that men with dust injured lungs were especially liable to develop tuberculosis, the dust irritation lessening the ordinary resisting powers of the lungs. While miners' consumption is not in itself infectious or contagious, it predisposes to tuberculosis. The greater the amount of rock dust injury the greater the liability to tuberculosis, the far advanced cases of miners' consumption practically all become tuberculous before their death.

Under an entirely voluntary system 720 miners presented themselves for physical examination, of whom 433 were found to have had their lungs injured by the inhalation of rock dust; of these 103 were also tuberculous, the amount of tuberculosis infection being greatest among the advanced cases of the rock dust disease.

Five years steady work with exposure to flint dust is fairly certain to find the miner in at least the first stages of miners' consumption. If the miner continues his work after being affected, death usually results within ten years from the time that exposure to flint dust commenced. Poor housing conditions were found to be prevalent and to add to the liability of tuberculous infection. Apparently tuberculosis is now occurring at an earlier stage of miners' consumption than was formerly the case. The report lays emphasis on the necessity of preventing the spread of tuberculosis through these cases, especially among miners' children. The fact that miners' consumption is a forerunner of tuberculosis necessitates that it be treated with the same hygienic precautions as is the latter disease.

The report concludes that aside from the hygienic supervision of underground working places, the education of the miner against the spread of infection and supervision of miners' children, especially those of consumptive parents, are matters of vital importance.

The National Committee for Mental Hygiene has created a subcommittee on furnishing hospital units for nervous and mental disorders to the United States Government, the project having been approved by Surgeon General W. C. Gorgas of the U. S. Army.

This subcommittee, of which Dr. Pearce Bailey of New York is chairman, is authorized to secure the services of alienists and neurologists to be commissioned in the Officers' Reserve Corps, Medical Section, and to serve in the neuro-psychiatric units which are to be attached to the base and other hospitals of the military services of the United States. Further information will be given, and application forms sent to physicians qualified in this branch of medicine, on application by letter or in person to The National Committee for Mental Hygiene, 50 Union Square, New York City.

BOOK REVIEWS

GUNSHOT INJURIES

By Col. A. Le Garde. 2nd Edition. W. Wood, New York. This is an extremely timely book, for our country's entrance into the world's war and the demand that needs must be met by the civilian medical man in filling up the proper surgical and medical quota of the army finds a place for a text, brief and pointed, on the injuries that occur in military service. Unfortunately Le Garde has not dealt with a phase of medical military service that the medical reserve officer needs must know, which is, the method of securing supplies, issuing them and accounting for them, each of which is a veritable red tape bugaboo to the but recent civilian practitioner. O'Reilly's in Vol. 4 of **Keen's Surgery** handles these questions at least amply enough to prepare one for instructions. The chapters of Le Garde's text covering Ballistics is wonderfully exact and illuminating, a phase of military surgery understood by few of the civilian medical men. The chapter dealing with abdominal military surgery is not complete. It deals with Otis' reports upon the Civil War, and the Franco-Prussian War; and Makins and Stevenson's Anglo-Boer War observations; Follenfant andOetting's observations from the Russian side of the Japanese-Russian War. It also touches the Turkish-Balkan War, and of course the Spanish-American War, these last three bringing abdominal gunshot findings up to the conditions through quite similar armament, especially small-arm injuries to be found in the present world War. The first half of the chapter leads one to infer that an expectant treatment were best, while the opposite is the true concensus of opinion among German,

English and French surgeons. This, then, makes this chapter rather weak as a guide to the American military medical man. Poor abstracting of French, English and Central Powers medical military literature explains it.

The chapter upon bone surgery is equally weak upon recent military surgical practice. Too little modern literature reviewed, too much dependence upon Civil, Franco-Prussian, Anglo-Boer, Spanish-American, Japanese-Russian and Turkish-Balkan Wars conclusions. No feature of surgery has changed as much as bone surgery, particularly transplant work in recent fractures.

The chapter on the casualties of all armies except the Turkish in the present war up to July 31, 1916, is appalling; as to the world's man-power loss, this chapter is intensely interesting. On the whole, the book is well printed, well proof read, covers a world of detail and should be read by all civil and medical reserve men.

—H. C.

THE NATION'S HEALTH, THE STAMPING OUT OF VENEREAL DISEASE

By Sir Malcolm Morris. Funk & Wagnalls. 1917, $1.25.

The War has altered many ideas concerning things hitherto deemed "necessaries." Lust and drink, which become still more unlicensed in warfare, working ravages among troops and civilians, are no longer deemed "necessary evils" by those in the war zone, while scientists high in authority are collecting facts enough to damn all such traffic in the camps and to shame and scare the citizen. The old argument that a man cannot be made moral by Act of Parliament is riddled by accumulated evidence that removal of temptation inclines to the formation of habits which may eventually blossom into creeds.

Regardful of the "busy-ness" of men nowadays, Sir Malcolm Morris has concentrated his clear-headed diagnostic and prophylactic views into the covers of a small volume. The subject matter is as free as possible from medical verbiage which would confuse the lay mind, and every right-thinking man and woman will care to study it. It places before men, in an unmistakable way, the insistent need of a more open discussion of the prophylaxis and treatment of venereal disease, and the urgency of laws to control it. One argument is new: He says that to leave unchecked disease, which means sterility in both sexes, when countries are being depleted by war, is improvidence carried to its highest point; but the book is full of such well-directed appeals to common sense.

—W. R. J.

A HANDBOOK OF PRACTICAL TREATMENT

By Many Writers. Vol. IV. The Newest Treatment

Edited by John H. Musser, Jr., B. S., M. D., and Thomas C. Kelly, I. A. M., M. D.
W. B. Saunders, Philadelphia and London.

Although supplementary to the volumes previously issued, volume IV is a system of treatment within itself. Here one finds recent knowledge put into usable form. Vaccines and serums, the Schick reaction, the use of bismuth paste, blood transfusion, the intravenous use of vaccine in typhoid, artificial pneumothorax, serum and ethylhydrocuprein in pneumonia, in short the latest and best in treatments will be found in this volume. And what is refreshing is the absence of fruitless discussions, vague theorizing, and repetition of the ancient material used as padding for larger works. The articles without exception are characterized by their sanity. One feels safe in following such leaders as the Mayos, Barker, Sippy, Rountree, Goldthwait, Janeway, Hare, Gorgas, Bloodgood and Dercum.

James Henrie Lloyd writes the article on insanity and says of Freud's analysis of dreams: "There is an unlimited field here for pseudoscience."

John G. Clark says: "I cannot accept the extravagant assertions of Lane and his followers that the colon is the source of all evil and with its removal marvelous changes ensue." Still, colectomy is not entirely rejected.

Park and Krumwilde have an exceptionally good article on vaccines and sera, and while not so full of enthusiasm as the literature of those having mercenary interests, their conclusions will be a safe guide to those who wish to do good and at the same time refrain from doing harm. In fact one might venture to suggest that this volume might be well substituted for the optomistic "literature" furnished by the drug houses as to the latest and best in treatment.

—G. W.

AUTOPLASTIC BONE SURGERY

By

Charles Davison, M. D. and Franklin Smith, M. D., 1916. 174 illus., Lea & Febiger, Philadelphia and New York.

Under the title, "Autoplastic Bone Surgery," is presented a volume of 369 pages, which is a general review of the newer bone surgery. It reviews the literature and gives briefly the results of experiments by the authors, but uses much more space for detailing clinical cases that illustrate indications for, and technique of operating. From all this is summarized the various methods and clinical uses which give the volume its greatest value.

Beginning with a brief statement regarding the laws of transplantation of bone, the authors pass on to the more complex subject of bone regeneration. They review the literature and discuss the subject as to whether periosteum regenerates bone, and in their conclusions rather neatly straddle the fence, albeit with experimental evidence to support the straddle. The anatomy and histology of healing of simple fractures, together with the histogenesis of ossification are given with a completeness that is gratifying.

Dr. Davison gives an extended list of indications for operation, and after mentioning the more important bone instruments, describes the operation of choice, often giving an illustrative case with accompanying drawings and roentgenograms. In general the volume gives one an idea of opposition to mechanical fixation devices, such as nailing, wiring and the use of Lane plates, preference being given to some form of autoplastic graft.

The volume is of timely value in weeding out and standardizing methods of real worth from the heterogenous mass of stuff that has been published in recent years in connection with bone surgery. —E. B. R.

The Surgical Clinics of Chicago. Volume I Number 2 (April 1917). Octavo of 221 pages, 83 illustrations. Philadelphia and London: W. B. Saunders Company. 1917. Published Bi-Monthly. Price per year: Paper, $10.00: Cloth, $14.00.

The April Surgical Clinics of Chicago, by a dozen of our old friends, is a volume on a par with others of this series. Among the more interesting clinics are those on splenectomy and blood transfusion, congenital dislocation of the hip, surgical lesions of the colon and removal of a bullet from the base of the skull through the mouth. Interesting points of technic are given in connection with wound closure, nerve blocking and the use of the Moynihan tube. Most of the clinics are on practical subjects, and we feel that clinicans realize that the surgeon, outside of the large medical centers, wants the redescription of important points connected with common subjects rather than clinics upon the rare conditions which, however interesting, most of us never see. —E. B. R.

By an error, the name of the publisher of Schafer's **Endocrine Organs** was omitted. Messrs. Longmans, Green and Co. published the volume.

TEXAS NOTES AND NEWS

The Red Cross Fund subscribed in El Paso alone, $100,000.00.

Dr. James Vance has returned from the East.

Dr. H. H. Stark, after spending some time in different Eastern cities and visiting the opthalmic meetings, has returned.

Dr. J. G. Homes, of Alamogordo, was down for his examination for the medical reserve corps.

Dr. F. P. Miller made a trip down the T. P. in the interest of the Red Cross fund.

Dr. W. L. Brown and Dr. Jenness and their families have returned from two weeks' camping trip on the Ruidoso.

Dr. T. H. Dabney of Columbus, New Mexico, is away on his vacation.

Dr. Frank Brady, of Dawson, New Mexico, has enlisted in the medical reserve corps and was down taking his examination.

Dr. Thigpin and Dr. Davis, of the Cananea, Mexico, Mining Company's hospital were passing through El Paso on their way East.

Dr. H. T. Moore has gone to Old Mexico in the interest of the Guggenheims Smelter people.

Dr. W. R. Jamieson underwent an operation for appendicitis about the middle of June. He is now convalescing.

Dr. E. B. Rogers will spend his vacation in California.

Dr. H. E. Stevenson has been promoted from Major to Lieutenant Colonel in the line service of the Texas National Guard.

Dr. J. A. Rawlings and family have returned from their vacation spent in Mountain Park.

Dr. F. D. Garrett spent three weeks on the Ruidoso in the month of June catching fish.

Dr. E. H. Irvin has left for the east for three weeks on his annual vacation.

Dr. L. G. Witherspoon and Dr. D. H. Huffaker have been appointed by the Governor to serve on the El Paso County and City Exemption board.

Dr. E. S. White, of Ysleta, has been appointed on the exemption board for Hudspeth County.

Dr. Wilkerson, of Nacozaria, Mexico, passed through on his way to Albuquerque, where he will spend his vacation with his family.

Dr. T. J. McCamant has received a commission as Major and will organize a Field Hospital, which will be a part of the Texas National Guards.

Those that have enlisted under the colors up to date: Dr. L. G. Witherspoon, Dr. H. O. Darnall, Dr. Paul Gallagher, Dr. W. R. Jamieson, Dr. I. J. Bush, Dr. Joseph Hilton, Dr. T. J. McCamant.

DR. JOHN W. TAPPAN
314 Mills Bldg.
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4 to 6 p. m.
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